Northumbria river basin district: climate change risk assessment worksheet

Name (as on your part A application form): Sunderland UTR Facility

Our permit reference number (if you have one): EPR/NP3900MP/A001

Your document reference number: 416.11075.00004/Appendix B2_2 CCRA

Risk assessment worksheet for the 2050s

Northumbria river basin district

You must carry out a climate change risk assessment for any new bespoke waste and installations permit applications if you expect to operate for more than 5 years. Use the user guide to complete the table. You can add in extra pages if necessary.

Consider how your operations will be affected by the changes in weather and climate described in the table. Consider any changes to average climate conditions that may impact on your operations, for example extreme rainfall.

Also consider:

- critical thresholds - where a 'tipping point' is reached, for example a specific temperature where site processes cannot operate safely
- changes to averages - for example an entire summer of higher than expected rainfall causing waterlogging
- where hazards may combine to cause more impacts

You can add in other climate variables if you wish.

If you have stated on your application form that you do not expect to be operational in 2050, you must still consider climate change risks for the time you do intend to operate. Whilst the variables are for the 2050s, this is an estimated date and you may experience these conditions before then.

This worksheet will sit in your management system. It must appear on the management system summary you submit with your application, even if you do not need to submit the whole risk assessment with your application.

If your pre-mitigation risk score (column D) is 5 or higher, you must complete columns E to H.

Potential changing climate variable	**A** **Impact**	**B** **Likelihood**	**C** **Severity**	**D** **Risk** (B x C)	**E** **Mitigation** (what will you do to mitigate this risk)	**F** **Likelihood** (after mitigation)	**G** **Severity** (after mitigation)	**H** **Residual risk** (F x G)
1. Summer daily maximum temperature may be around 6°C higher compared to average summer temperatures now.	No negative impact expected	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. Winter daily maximum temperature could be 4°C more than the current average with the potential for more extreme temperatures, both warmer and colder than present.	No negative impact expected	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3. The biggest rainfall events are up to 20% more intense than current extremes (peak rainfall intensity)*.	(a) potential for the surface water drainage system to become overloaded. (b) potential for the site to become flooded. Part of the site to the west and southwest lie within flood zone 2 and 3.	1	2	2	a) The engineered site drainage system will collect and treat the water in an effluent treatment plant on site before discharge offsite to the docks. All clean surface water is collected separately and discharged off site. b) Surface water is discharged to the docks which is a large water body controlled by two sets of lock doors. The northern set of lock doors are closed in the event of extreme tidal surging in the North Sea or elevated water levels along the lower reach of the River Wear so it is anticipated that capacity in the dock for temporary pluvial events is sufficient. A Flood Risk Assessment (FRA) was undertaken as part of the planning application[1] which demonstrates that surface water run-off can be managed in accordance with best practice so that flood risk would not be increased by the new development. The FRA concludes that the flood risk at the site from sea or estuary/docks will remain low for the lifetime of the development. There is a 'negligible' risk of waves overtopping onto the site if sea levels are high due to storm surging. However, it is concluded that the site drainage should have capacity to contain this water and for it to pass through into Hudson Dock. The site will be designed with the following mitigation as identified in the FRA: • Sheet piling adjacent to the site should be renewed with	1	1	1

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					gravel and ground sloping from it into the site reinforced to minimise the potential for scour in the event of wave action; • Equipment located in the eastern area of the site should eb located on a plinth raised at least 150mm above adjacent ground level to ensure that water from waves would fall under gravity to a lower level than the equipment; • Any opening such as related to air intake should be oriented to face west (i.e. away from the direction of water progressing on to the site); • Personnel will not access the eastern area of the site if there are storm warnings and associated large waves; and • The site will have an emergency flood response plan that identifies when the site should be evacuated and which route should be taken.			
4. Average winter rainfall may increase by 25% on today's averages.	(a) potential for the surface water drainage system to become overloaded. (b) potential for the site to become flooded.				Same as above (point 3.)			

[1] SLR Ref 403:11075.00001 Waste Tyre Processing Facility, Port of Sunderland, Technical Appendix 10/1: Flood Risk Assessment Planning Statement April 2021

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5. Sea level could be as much as 0.6m higher compared to today's level *.	Due to the site setting there is potential for the site to flood with increased sea level.	1	1	1	A Flood Risk Assessment carried out for the site concludes that there is a 'negligible' risk of waves overtopping onto the site if sea levels are high due to storm surging. However, the site drainage should have capacity to contain this water and for it to pass through into Hudson Dock. Water levels within the docks are controlled by two sets of lock doors. The northern set of lock doors are closed in the event of extreme tidal surging in the North Sea or elevated water levels along the lower reach of the River Wear. Therefore if sea levels were to rise, Hudson Dock would manage the water levels and the site's drainage capacity would be able to contain any water during increased storm surges. Areas of the site which are located within flood zone 3 are used for loading the docks and it is therefore a compatible land use for water.	1	1	1
6. Drier summers, potentially up to 31% less rain than now.	No negative impact expected. The site uses mains water for processing.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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7. At its peak, the flow in watercourses could be 30% more than now, and at its lowest it could be 65% less than now.	Increased flow– potential for the site to flood. Decreased flow – no negative impact expected. Water usage is from mains water supply.	1	1	1	Due to the site settings and location the water levels are managed within the estuary. It is therefore unlikely that the site would flood. However the site has an engineered site drainage system which will collect and treat the water in an effluent treatment plant on site before discharge offsite to the docks if necessary. All clean surface water is collected separately and discharged off site.	1	1	1

*Indicates data has come from climate change allowances as part of the spatial planning process. Evidence from your planning submission is acceptable evidence for this worksheet.